



SEQUENCE LISTING

<110> CREAMERS, Jantina
ANGENENT, Gerrit
KATER, Martin

<120> Process to collect metabolites from modified nectar by
insects

<130> U-13212-4

<140> 09/743885

<141> 2001-01-16

<160> 29

<170> PatentIn Ver. 2.1

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<211> 265

<212> PRT

<213> Petunia x hybrida

<220>

<223> strain: W115

<220>

<223> tissue type: nectar gland

<220>

<223> NEC1 amino acid sequence

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Met Ala Gln Leu Arg Ala Asp Asp Leu Ser Phe Ile Phe Gly Leu Leu
1 5 10 15

Gly Asn Ile Val Ser Phe Met Val Phe Leu Ala Pro Val Pro Thr Phe
20 25 30

Tyr Lys Ile Tyr Lys Arg Lys Ser Ser Glu Gly Tyr Gln Ala Ile Pro
35 40 45

Tyr Met Val Ala Leu Phe Ser Ala Gly Leu Leu Tyr Tyr Ala Tyr
50 55 60

Leu Arg Lys Asn Ala Tyr Leu Ile Val Ser Ile Asn Gly Phe Gly Cys
65 70 75 80

Ala Ile Glu Leu Thr Tyr Ile Ser Leu Phe Leu Phe Tyr Ala Pro Arg
85 90 95

Lys Ser Lys Ile Phe Thr Gly Trp Leu Met Leu Leu Glu Leu Gly Ala
100 105 110

Leu Gly Met Val Met Pro Ile Thr Tyr Leu Leu Ala Glu Gly Ser His
115 120 125

Arg Val Met Ile Val Gly Trp Ile Cys Ala Ala Ile Asn Val Ala Val

130

135

140

Phe Ala Ala Pro Leu Ser Ile Met Arg Gln Val Ile Lys Thr Lys Ser
145 150 155 160

Val Glu Phe Met Pro Phe Thr Leu Ser Leu Phe Leu Thr Leu Cys Ala
165 170 175

Thr Met Trp Phe Phe Tyr Gly Phe Phe Lys Lys Asp Phe Tyr Ile Ala
180 185 190

Phe Pro Asn Ile Leu Gly Phe Leu Phe Gly Ile Val Gln Met Leu Leu
195 200 205

Tyr Phe Val Tyr Lys Asp Ser Lys Arg Ile Asp Asp Glu Lys Ser Asp
210 215 220

Pro Val Arg Glu Ala Thr Lys Ser Lys Glu Gly Val Glu Ile Ile Ile
225 230 235 240

Asn Ile Glu Asp Asp Asn Ser Asp Asn Ala Leu Gln Ser Met Glu Lys
245 250 255

Asp Phe Ser Arg Leu Arg Thr Ser Lys
260 265

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<211> 221

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<220>

<223> strain: W115

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<223> tissue type: nectar gland, secretory cell

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<223> FBP15 amino acid sequence

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Arg Gln Val Thr Phe Cys Lys Arg Arg Asn Gly Leu Leu Lys Lys Ala
20 25 30

Tyr Glu Leu Ser Val Leu Cys Asp Ala Glu Val Ala Leu Ile Val Phe
35 40 45

Ser Ser Arg Gly Arg Leu Tyr Glu Tyr Ala Asn Asn Ser Val Lys Ala
50 55 60

Thr Ile Asp Arg Tyr Lys Lys Ala Ser Ser Asp Ser Ser Asn Thr Gly
65 70 75 80

Ser Thr Ser Glu Ala Asn Thr Gln Phe Tyr Gln Gln Glu Ala Ala Lys
85 90 95

Leu Arg Val Gln Ile Gly Asn Leu Gln Asn Ser Asn Arg Asn Met Leu
100 105 110

Gly Glu Ser Leu Ser Ser Leu Thr Ala Lys Asp Leu Lys Gly Leu Glu
115 120 125

Thr Lys Leu Glu Lys Gly Ile Ser Arg Ile Arg Ser Lys Lys Asn Glu
130 135 140

Leu Leu Phe Ala Glu Ile Glu Tyr Met Arg Lys Arg Glu Ile Asp Leu
145 150 155 160

His Asn Asn Asn Gln Met Leu Arg Ala Lys Ile Ala Glu Ser Glu Arg
165 170 175

Asn Val Asn Met Met Gly Gly Glu Phe Glu Leu Met Gln Ser His Pro
180 185 190

Tyr Asp Pro Arg Asp Phe Phe Gln Val Asn Gly Leu Gln His Asn His
195 200 205

Gln Tyr Pro Arg Gln Asp Asn Met Ala Leu Gln Leu Val
210 215 220

<210> 3
<211> 18
<212> PRT
<213> Calluna vulgaris

<220>
<223> tissue type: flower

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<223> Calluna vulgaris signal peptide

<400> 3
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1 5 10 15

His Ala

<210> 4
<211> 1205
<212> DNA
<213> Petunia x hybrida

<220>
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cttcttggtt atattgtatc attcatggtc ttcttagcac ccgtgccaac attttacaaa 180
atataaaaaa gaaaaatcatc agaaggatata caagcaatac catatatggt agcactgttc 240
agcgcggac tattgctata ttatgctt ctcaggaaga atgcctatct tatcgtcagc 300
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cccagaaaatc ctaagatccc cacaggggtt ctgatgctct tagaattggg agcccttagga 420
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aatatactgg gctttctatt cggaaatcgat caaatgtat tatattttgtt ttacaaggat 720
tcaaagagaa tagatgtatc aaaatctgtat cctgttcgag aagctacaaa atcaaaagaa 780
ggtgttagaaa tcattatcaa cattgaagat gataattctg ataacgcatt gcagtcctatg 840
gagaaggatt ttccagact gcggacatca aaataagcaa gaagatgatc aaaaaatgac 900
aaagctaagg agtttgaagt aaggcaagga acttgacact gaatatctaa gctaatttagc 960
aagacttttag cagcttgcata tattttgtgt ttgtgagggtt ttaccttata attagcttgc 1020
agcatagcct tcccactaat aattctgtt agcgaatctt atatatgggaa aataacttaca 1080
ctagtatgca tcttcttatat acatgtttgg cacttgacta tacatagaaa aattaacaag 1140
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<210> 5

<211> 1157

<212> DNA

<213> Petunia x hybrida

<220>

<223> strain: W115

<220>

<223> tissue type: nectar gland

<220>

<223> cDNA library of nectaries from Petunia hybrida
flowers

<220>

<223> FBP15

<400> 5

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aataaaagggg atgttccaga atcaagaaga gaagatgtca gactcgccctc agaggaagat 180
ggaaagagaa aagattgaga ttaagaggat tgaaaataca acaaatcgat aagtcaactt 240
ctgttaagaga agaaatgggt tgcttaaaaaa agcttatgaa ctttctgttc tttgtgatgc 300
tgaagttgtt ctcatcgat tctcaagccg tggccgcctc tatgaatatg ctaacaacag 360
tgtgaaggca acaattgtata gatataagaa agcatcctca gattcctcca acactggatc 420
tacttctgaa gctaacaactc agttttatca acaagaagct gccaaactcc gagttcagat 480
tggtaactta cagaactcaa acaggaacat gctaggcggag tctctaaatgtt ctctgactgc 540
aaaagatctg aaaggcctgg agaccaaact tgagaaagga attagtagaa tttaggtccaa 600

aaagaatgaa ctccgtttt ctgagattga gtatatgcga aaaaggaaaa ttgatttgc 660
caacaacaat cagatgcttc gggcaaagat agctgagagt gaaagaaaatg tgaacatgat 720
gggaggagaa tttgagctga tgcaatctca tccgtacgat ccaagagact tcttccaagt 780
gaacggctta cagcataatc atcaatatcc acgccaagac aacatggctc ttcaattagt 840
ataagtttat aataaaatgc atggttgaa gcactctgat tgggtggat ttggattatg 900
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caaagactta atttaacata taaatataat tgtgtatgc tgggttattt tatggatgt 1080
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<212> DNA
<213> Calluna vulgaris
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<210> 7
<211> 2141
<212> DNA
<213> Petunia x hybrida
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<220>
<223> strain: W115

<220>
<223> NEC1 promoter

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tatgaagagg accaagaagc tccaaataatt ttgggaagag cattcttaat cacatcgatg 180
gcaattattg acatggaact tggggagatg actgtgagag cgcatggaga aaaggtaact 240
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atataatat atatacacac acacaccatt tccagcgatc ttacccatt tttattcaaa 1440
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gattttctat actatttgt cccttgaat tttaaaaaaa aatgagcga tggtaagata 1560
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tcacctaaaa ctacatcatt tatggcgccc ggactagacg tagccaaata taaaaacgca 1680
atggccattc agttcatgtc attttatat cttcatcca ataattttac tcaaaattga 1740
tgtacagtt ggtctctgtat gtgcacttta ctatacgtaa tacggaattt acattataat 1800
taaagagaac tgttccacta aattttaatg atttaattaa tttaactcg ttacttgtat 1860
tattattatt gctgtattt tttgtcattt gaatttggca ccgcagattt ttgtatgcaa 1920
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tttacatcatac tttaccgaat tttgtttt ttttctctg ttgttgccttccactataaa 2040
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<210> 8
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer prat
122

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<210> 9
<211> 23
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<220>
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<400> 9
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<210> 10
<211> 29
<212> DNA
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<220>
<223> Description of Artificial Sequence: primer prat
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<400> 10
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<210> 11
<211> 24

<212> DNA
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<210> 12
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<220>
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<210> 13
<211> 35
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<220>
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<210> 14
<211> 32
<212> PRT
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<213> Calluna vulgaris

<220>  
<223> CVH 50 N-terminal sequence

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Ala Gly Tyr Ser Cys Thr Glu Pro Ser Thr Val Thr Ser Gln Asp Phe  
20 25 30

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<211> 40  
<212> PRT  
<213> Calluna vulgaris

<220>  
<223> CVH 29 N-terminal sequence

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20 25 30

Val Phe His Gly Leu Gly Thr Ala  
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<210> 16  
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<210> 17  
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<212> DNA  
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<210> 18  
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<210> 19  
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<210> 20  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer prat  
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<400> 20  
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<210> 21  
<211> 27  
<212> DNA  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer prat  
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<210> 24  
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<220>  
<223> Description of Artificial Sequence: primer prat  
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<210> 25  
<211> 33  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer prat  
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<223> Description of Artificial Sequence: primer prat  
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23

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31

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<212> DNA  
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<220>  
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33